

ABSTRACT

A controller (31) of a knocking index value calculation device in a spark ignition engine (1) determines operating conditions of the engine (1), estimates an in-cylinder pressure at a reference crank angle, which is set at a predetermined crank position after compression top dead center, using these operating conditions, estimates a temperature of unburned gas in the cylinder at the reference crank angle using these operating conditions, and calculates a knocking index value using the in-cylinder pressure and unburned gas temperature.